

**AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Clean Water Act, as amended, (33 U.S.C. §§ 1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§ 26-53),

Red Wing Meadow Trout Hatchery

is authorized to discharge from the facility located at

**Red Wing Meadow Trout Hatchery
North Leverett Road
Montague, MA 01375**

to receiving waters named

Sawmill River (Connecticut River Watershed - MA34)

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective 60 days after signature.

This permit and the authorization to discharge expires at midnight, four (4) years from the effective date to coincide with other facilities in the Connecticut Basin..

This permit supercedes the permit issued April 22, 1996.

This permit consists of 10 pages in PART I including effluent limitations, monitoring requirements, Attachment A, Freshwater Chronic Toxicity Test Procedures & Protocol, and 35 pages in PART II including General Conditions and Definitions.

Signed this 22nd day of April, 2002

/Signature on File/

Linda M. Murphy, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency
Boston, Massachusetts

Director, Division of Watershed Management
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, Massachusetts

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number 001 , treated effluent to the Sawmill River. Such discharges shall be limited and monitored by the permittee as specified below. Samples taken in compliance with the monitoring requirements specified below shall be taken at a location that provides a representative analysis of the effluent prior to mixing with any other wastestreams.						
<u>EFFLUENT CHARACTERISTIC</u>		<u>EFFLUENT LIMITS</u>			<u>MONITORING REQUIREMENTS</u>	
PARAMETER	UNITS	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>MAXIMUM DAILY</u>	<u>MEASUREMENT FREQUENCY</u>	<u>SAMPLE TYPE</u>
FLOW	MGD	***	***	1.44	Continuous ¹	Recorder
BOD ₅	mg/l lbs/day	5 60	***	5 60	Quarterly, during cleaning operations ²	Composite ³
TSS	mg/l lbs/day	***	***	3 36	Quarterly, during cleaning operations ²	Composite ³
pH	SU	(See Condition I.A.1.b on Page 3)			Weekly	Grab
Total Residual Chlorine	ug/l	22	***	38	Monthly and when chlorine products are in use ⁵	Composite
Dissolved Oxygen	mg/l	≥ 6.0 mg/l			When formalin is in use ⁴	Grab
Temperature	°C	Report	***	20	Weekly ⁶	Grab
Formaldehyde	mg/l	***	***	1.48	When formalin is in use ⁴	Grab
Whole Effluent Toxicity Testing ^{7,8}	%	Acute LC50 ≥ 100%			Quarterly, during formalin discharge	Composite
Whole Effluent Toxicity Testing ^{8,9}	%	Chronic C-NOEC ≥ 50%			Quarterly, during formalin discharge	Composite

See page 3 for explanation of superscripts

Footnotes:

1. The effluent flow shall be continuously measured and recorded using a flow meter and totalizer.
2. The quarterly BOD and TSS samples shall be taken immediately following a raceway cleaning and/or maintenance activity rather than at a random operating time during the month.
3. Quarterly Cleaning Operation Sampling - The composite samples shall consist of at least 8 grab samples collected during the cleaning cycle.
 - a. If raceway flows are continuously discharging through a settling pond or are diverted through a settling pond during cleaning, a representative composite sample shall be taken of the settling pond overflow, during cleaning operations.
 - b. If raceway flows during cleaning operations are diverted to treatment lagoons which are continually discharging, a representative composite sample shall be taken of the lagoon discharge at the time of maximum concentration or design detention time, which ever is best representative of maximum concentration.
 - c. If lagoons are batch discharged, a representative composite sample shall be taken at the time of discharge.
 - d. If raceway or tanks are vacuumed, a representative composite sample of hatchery discharge shall be taken during the vacuuming cycle.
4. Sampling for dissolved oxygen and Whole Effluent Toxicity testing shall be conducted quarterly during formalin use. Sampling is not required if formalin is not used during the quarter.
5. Sampling for Total Chlorine Residual shall be conducted monthly and when chlorine is used on site.
6. The temperature of the effluent shall not exceed 20° Celsius at any time, and the rise in temperature due to the discharge shall not exceed 1.7° Celsius. Additionally, the natural seasonal and daily temperature variations shall be maintained. There shall be no changes from background conditions that would impair any use assigned to this Class, including site-specific limits necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms. The permittee shall monitor the discharge and the receiving water weekly.
7. The permittee is required to conduct Whole Effluent Toxicity (WET) testing following EPA Region I Protocols. The test species is Ceriodaphnia. A cover letter indicating the sampling location shall be submit with the test results. The test results shall be submitted by the last day of the month following completion of the test. A test must be performed in accordance with test procedures and protocols specified in Attachment A of this permit. The permit may be reopened based on WET sampling results to a toxicity reduction evaluation (TRE) or to include specific effluent limitations for toxic parameters.

8. The acute Whole Effluent Toxicity test limit is LC_{50} equal to 100%. The LC_{50} is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
9. The chronic Whole Effluent Toxicity test limit is C-NOEC of greater or equal to 50%.

Part I.A.1. (continued)

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
 - b. The pH of the effluent shall not be less than 6.5 nor greater than 8.3 and not more than 0.5 units outside of the background range. There shall be no change from background conditions that would impair any use assigned to this class.
 - c. The discharge shall not cause objectionable discoloration of the receiving waters.
 - d. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
 - e. The permittee shall not discharge into the receiving water any pollutant or combination of pollutants in toxic amounts.
 - f. The permittee shall notify EPA and the State within 24-hours upon the occurrence of a water quality induced mortality of greater than 25 percent in any aquatic species under culture at the facility in accordance with reporting requirements in General Conditions PART II.D.1.e.
 - g. Samples taken in compliance with the monitoring requirements specified in this permit shall be taken from the tail race prior to mixing with any receiving water or any other waste stream.
2. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe (40 Code of Federal Regulations (CFR) §122.42):
 - a. That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - (1) One hundred micrograms per liter (100 ug/L);
 - (2) Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2,4-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

- (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
 - (4) Any other notification level established by the Director in accordance with 40 CFR §122.44(f) and Massachusetts regulations.
 - b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
 - (1) Five hundred micrograms per liter (500 ug/L);
 - (2) One milligram per liter (1 mg/L) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
 - (4) Any other notification level established by the Director in accordance with 40 CFR §122.44(f) and Massachusetts regulations.
 - c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.
- 3. No components of the effluent shall result in any demonstrable harm to aquatic life or violate any water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards, with the permittee being so notified.
- 4. This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable standard or limitation promulgated or approved under sections 301(b)(2)(C) and (d), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - a. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - b. Controls any pollutants not limited in the permit.
- 5. Any change in: 1) the fish species to be raised at this facility or, 2) the development stage to be attained at this facility, will require written notification to EPA and the State and possible permit modification.

6. There shall be no discharge of untreated wastewaters resulting from cleaning accumulated solids in the raceways, culture tanks, screens and associated equipment.
7. Medication
 - a. The permittee shall use only medications and disease control chemicals in dosages and combinations as approved by the U.S. Food and Drug Administration (USFDA), U.S. Fish and Wildlife Service (USF&WS), EPA and the Commonwealth of Massachusetts DEP.
 - b. The permittee shall use these medications and chemicals as needed to treat a disease or disease-causing conditions. The prophylactic use of disease control medications is prohibited.
 - c. The permittee shall notify within 24 hours by telephone and within 5 working days in writing the Regional Administrator at EPA-New England, U.S. Fish and Wildlife Service, the Massachusetts Division of Fisheries and Game, the Massachusetts Department of Environmental Protection of the emergency use or the immediate intended use of any medication and/or chemical not specifically identified in the Best Management Practices Plan as described below.
 - d. The Regional Administrator or the Director will notify the permittee when the use of a specific chemical described in *PART I.A.7.c.*, immediately above, is unacceptable or that the dosage concentration or frequency level must be modified to protect the aquatic community in the receiving water.
8. Best Management Practices (BMP) Plan
 - a. A plan shall be developed which establishes Best Management Practices (BMPs) to be followed in operating the facility, cleaning the raceways/culture tanks, screens and other equipment and disposing of any solid waste. The purpose of the plan is to identify and to describe the practices which minimize the amounts of pollutants (biological, chemical and medicinal) discharged to surface waters.
 - b. The BMP plan shall be completed, signed and submitted to EPA and MA DEP **within 90 days after the effective date** of this permit; the plan should be modified as necessary during the life of the permit. A current copy of the plan shall be maintained at the facility.
 - c. The permittee shall submit a copy of the plan to EPA and the MA DEP and notify in writing that the plan addresses all required elements described in this permit. In the letter, the permittee shall include the specific date the plan was implemented. On that specific date, the plan becomes an enforceable element of the permit.
 - d. The BMP Plan will be considered acceptable if the EPA and the State have not responded within forty five (45) days of its receipt.

- e. The permittee shall amend the BMP plan within thirty (30) days following a change in facility design, construction, operation, or maintenance which affects the potential for the discharge of pollutants into surface waters. The amendments of the BMP plan shall be reviewed and approved by EPA and MA DEP as in subparagraph d above.
- f. The BMP Plan shall include, as a minimum, the following items:
 - i. During operations:
 - (1) A description of the pollution control equipment or methods used to enhance solids collection.
 - (2) A description of how excessive solids buildup will be identified to trigger more frequent cleaning of the raceways/culture tanks and equipment thereby preventing more suspended and dissolved materials in the discharge.
 - (3) A description of feeding methods used to minimize the amount of feed residual in the discharge.
 - (4) A description of the preventative maintenance program for cleaning equipment so that delays in cleaning due to equipment failures are avoided.
 - (5) A description of the analyses and model (if one is used) used to determine the time of maximum concentration based on dosage, injection point, facility flow, etc.
 - ii. Biological Pollution
 - (1) Describe, in detail, the precautions that will be exercised by the facility to prevent aquatic organisms that are not indigenous to the New England area and/or the United States from becoming established in the local surface waters.
 - (2) A description for storage and treatment of Outfall 001 discharge during plant upsets to prevent biological pollution (non-native organism, fish parasites and fish diseases) from entering the receiving water in the case of an untreated discharge bypass.
 - iii. Cleaning of culture tanks/raceways and other equipment:
 - (1) Describe in detail how the accumulated solids are to be removed, dewatered and methods of disposal.
 - (2) Describe where the removed material is to be placed and the techniques used to prevent it from re-entering the surface waters from any on-site

storage. If the material is removed from the site, describe who received the material and its method of disposal and/or reuse.

iv. Medications and chemicals used in the facility:

- (1) List in the plan all medications and chemicals that are expected to be used in the culture tanks/raceways. For each medication or chemical, identify:
 - (a) Product name of the medication or chemical.
 - (b) The chemical formulation of the medication or chemical.
 - (c) The purpose or use of the chemical.
 - (d) The dosage concentration, frequency of application (hourly, daily, etc.) and the duration (hours, days) of treatment.
 - (e) The method of application.
 - (f) Material Safety Data Sheets (MSDS), Chemical Abstracts Service (CAS) Registry number for each active therapeutic ingredient.
 - (g) The method or methods used to detoxify the wastewater prior to discharge following application of chemical and/or medication.
 - (h) Information on the persistence and toxicity of each medication or chemical.
 - (i) Information on the Food and Drug Administration (USFDA) approval for the use of said medication or chemical on fish or fish related products used for human consumption.
 - (j) Available aquatic toxicity data for each medication or chemical used (vendor data, literature data, etc.); LC_{50} at 48 and/or 96 hours and No Effect Level (NOEL) concentrations for typical aquatic organisms (salmon, trout, daphnia, fathead minnow, etc.).

v. Personnel Training

- (1) Describe the training to be provided for employees to assure they understand the goals and objectives of the BMPs, the requirements of the NPDES Permit and their individual responsibilities for complying with the goals and objectives of the BMP Plan and the NPDES permit.

vi. BMP Records Maintenance

- (1) Records of the calculations done at the time of sampling must be maintained at the facility in order that an inspector may verify that the sampling was properly conducted

B. MONITORING AND REPORTING

1. Reporting

Monitoring results obtained during the previous quarter shall be summarized each month and reported quarterly on separate Discharge Monitoring Reports (DMRs), postmarked no later than the 15th day of the month following the completed reporting period.

Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

U.S. Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114-8127

The State Agency is:

Massachusetts Department of Environmental Protection
Western Regional Office
436 Dwight Street
Suite 402
Springfield, MA 01103

A copy of all technical information associated with medications and chemicals used for disease/parasite control and complementary aquatic toxicology and biological pollution shall be submitted to the following:

U.S. Fish and Wildlife Service
300 Westgate Center Drive
Hadley, Massachusetts 01035-9589

to:

Massachusetts Department of Environmental Protection
Office of Watershed Management
627 Main Street, 2nd Floor
Worcester, MA 01608

and to:

Massachusetts Department of Fisheries, Wildlife and Environmental Law Enforcement

Massachusetts Division of Fisheries and Wildlife
Field Headquarters
One Rabbit Hill Road
Westborough, Massachusetts 01581

C. STATE PERMIT CONDITIONS

1. This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP) under Federal and State law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MA DEP pursuant to M.G.L. Chap.21, §43.
2. Each Agency shall have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this Permit is declared, invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as an NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this Permit is declared invalid, illegal or otherwise issued in violation of Federal law, this Permit shall remain in full force and effect under State law as a Permit issued by the Commonwealth of Massachusetts.